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February 15, 2022

TO: Interested Parties
FROM: Teresa Ann Ciapusci, Region-Operations Outreach Manager
SUBJECT: 2022 Fish Survey Season-Water Level and Streamflow Forecast

The Department of Natural Resources (DNR), in consultation with the Department of Fish and Wildlife (WDFW), provides the following forecast for statewide water abundance for the 2022 fish survey season to focus appropriate attention on potential drought conditions when scheduling and conducting fish surveys.¹ Many factors influence the extent and distribution of fish species in a watershed. Drought conditions can alter how fish species occupy or access streams.

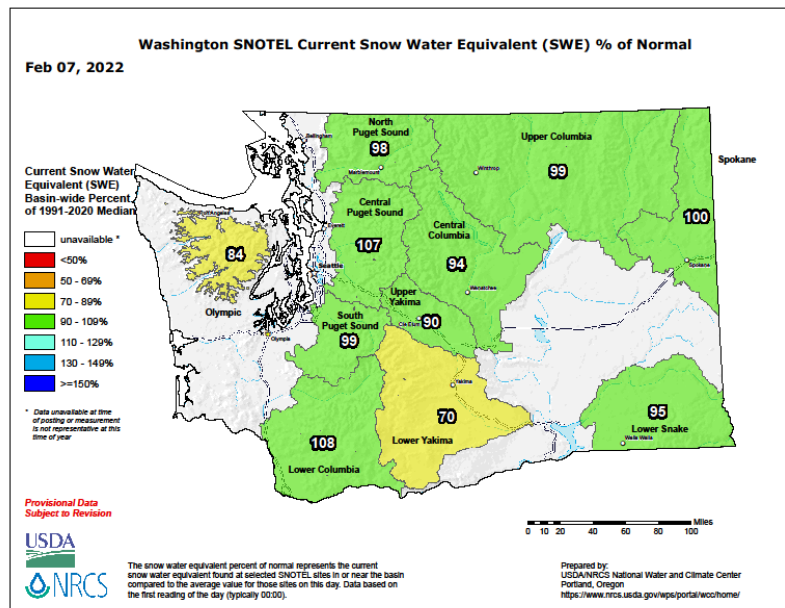
Under Natural Resource Conservation Service (NRCS) definitions, drought conditions may be present where basins have 70 percent or less of the basin's snow water equivalent. Under Washington state statute, drought conditions can exist at 75 percent or less of the basin's normal water supply. The 2022 NRCS report estimated Washington State snow pack ("snow water equivalents") ranged from 70 to 107 percent of normal statewide as of February 7, 2022 (Figure 1). The January 2022, *Water Supply Outlook Report* reports basin percentages of normal to above normal ranging from 67 to 188 percent.²

¹ Forest Practices Board Manual [Section 13, Part 2](#) "Guidelines for Determining Fish Use for the Purpose of Typing Waters" (see also WAC [222-16-031](#) *Interim Water Typing System*).

² The January NRCS Report states NRCS SNOTEL gages in some locations are not reporting per usual due to equipment damage caused by the heavy, wet snow in late December, early January; thus, some areas typically reported are showing flat line data or preventing accurate data collection. Source: Washington Water Supply Outlook Report, January 1, 2022, cover page, at [Water Supply Outlook Reports | NRCS Washington \(usda.gov\)](#).

Figure 1. Washington SNOTEL snow water equivalent percentage of normal by basin as of February 7, 2022.

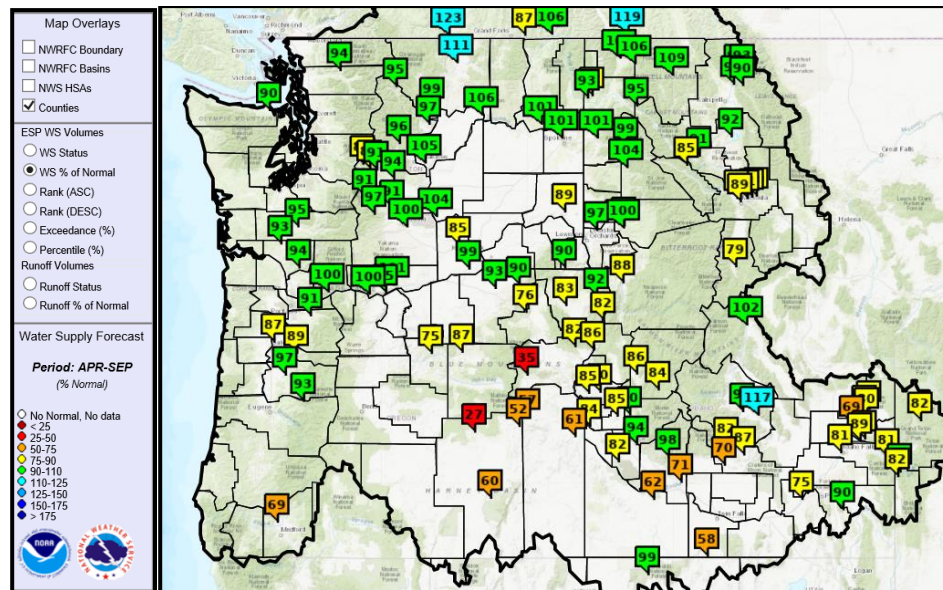
https://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/wa_swepctnormal_update.pdf



Washington water and fish managers review several forecasting products when considering a drought declaration under state statute and rule.³ In addition to the aforementioned NRCS information, Washington references the National Oceanic and Atmospheric Administration's (NOAA) Northwest River Forecast Center (NWRFC) forecast for water supply. Figure 2 depicts the February 3, 2022, NWRFC water supply prediction for the period April - September 2022. As of this week, water supplies are predicted to range between 102 and 129 percent of normal during April-September 2022, but are predominantly expected to average about 114 percent of normal for Washington streams.

³ Title [43.83B](#) (400-901) RCW; Chapter [173-166](#) WAC

Figure 2. NOAA Northwest River Forecast Center water supply prediction for the period April through September, 2022.



Map courtesy of <https://www.nwrfc.noaa.gov/ws/>

The current snow pack levels (Figure 1) and predictions for streamflow (Figure 2) are predominantly at or above normal. As well, the January 2022 NRCS *Water Supply Outlook Report* indicates, in its most recent forecast through late-January, a high probability for below normal temperatures and above normal precipitation. Additionally, the report's 3-month forecast indicates below normal temperatures and above normal precipitation, which is indicative of the forecasted Enso La Nina⁴. Surveyors should review specific stream flow conditions (using the links provided below) prior to conducting surveys in low-flow affected areas. Landowners should consult with their DNR forest practices forester, WDFW habitat biologist, and/or tribal biologist prior to conducting a protocol survey during low-flow conditions.

Proponents of water type changes need to answer all questions in the water type modification form and should provide specific information (pictures are strongly encouraged) demonstrating how stream flows and fish use determinations were unaffected by low-flow conditions, if present. If applicable, proponents should also provide information demonstrating how fish use determinations were unaffected by mass wasting or stream scouring events. DNR will process water type modifications only when complete information is provided on water type modification forms to support the proponent's request (for example, justification solely on a phrase such as "flow was good" is considered insufficient).

⁴ NRCS January 1, 2022, Water Supply Outlook Report, page 3; [Water Supply Outlook Reports | NRCS Washington \(usda.gov\)](https://www.nrcs.usda.gov/water-supply-outlook-reports)

Landowners and interested parties can find details regarding drought effects in specific basins by reviewing the following water supply forecast and stream flow resources:

- The Natural Resource Conservation Service *Current Water Supply Outlook Report*:
<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/wa/snow/waterproducts/>
 2 Title 43.83B (400-901) RCW; Chapter 173-166 WAC
- For drought status under the Washington State definition, as well as information about the state drought declaration process, review Ecology's drought information:
 Statewide Conditions: <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-availability/Statewide-conditions>
- Ecology also provides links to a variety of water supply data and forecasting web sites:
<https://ecology.wa.gov/Water-Shorelines/Water-supply>
- For details regarding whether or not drought may affect a specific basin, please review the Northwest River Forecast Center (NWRFC) "*Ensemble Streamflow Prediction (ESP) Water Supply Forecast as Percent of Average*": <http://www.nwrfc.noaa.gov/ws/>.
- Please review stream flow conditions prior to conducting surveys in low-flow-affected areas. Review flows at specific Washington locations at:
 - Flow Monitoring Network: <https://fortress.wa.gov/ecy/eap/flows/regions/state.asp>
 - WA Current Streamflow Summary:
<https://waecy.maps.arcgis.com/apps/Viewer/index.html?appid=832e254169e640fba6e117780e137e7b>

If you have questions about conducting protocol fish presence surveys or water typing in general, please contact Forest Practices staff at one of the six DNR region offices:

- Northeast: (509) 684-7474
- Northwest: (360) 856-3500
- Olympic: (360) 374-2800
- Pacific Cascade: (360) 577-2025
- Southeast: (509) 925-8510
- South Puget Sound: (360) 825-1631

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